

APPARATUS FOR EVALUATING PADDLED WATERCRAFT

Background of the Invention

5 (1) Field of the Invention

The present invention relates to an apparatus to enable initial users to evaluate paddled watercraft without placing the watercraft into the water, and for use by experienced paddlers in evaluating the handling characteristics of paddled watercraft
10 of different configurations and handling characteristics.

(2) Description of the Prior Art

Currently, a new user of a given kayak design, whether a beginner with no previous experience who wants to learn how to paddle a kayak or an experienced kayaker wanting to evaluate the characteristics of one or more kayak designs, must do
15 so by placing the kayak in the water. This requirement creates several problems.

First, if the individual is new to kayaking, simply having to get into a kayak that is in the water may be met with considerable trepidation, due to the fear of tipping over into the water. Instruction in the use of the kayak is also difficult since the
20 instructor must remain on the dock or land, or launch a second kayak. Even if the individual is an experienced kayaker who wants to try out a new kayak, or compare the characteristics of two or more kayak designs, the need to transport the kayak or kayaks to the water is inconvenient, particularly in inclement weather.

Thus, there is a need for a means that would enable both beginning and experienced kayakers to evaluate a kayak's handling characteristics without the need

to place the kayak into the water. This need also exists to a lesser extent with other types of paddled watercraft, such as canoes.

Summary of the Invention

This need is addressed by the apparatus of the present invention, which is comprised of a carriage that is adapted to support a watercraft on its upper surface. While the apparatus will be described for use with a kayak, it will be understood that carriages of similar configurations may be used to support canoes and other paddled watercraft, and that the following description, although referring to a kayak is equally applicable to apparatus for use with other watercraft.

The carriage has a curved lower surface adapted to be positioned transversely of the longitudinal axis of a kayak or other paddled watercraft, so that the carriage can roll or tilt from side-to-side in response to the motion of the paddler. Stops may be provided to prevent the carriage from rolling past a predetermined angle on either side. Preferably, the carriage is constructed in two sections, with the sections being positionable towards the front and rear of the watercraft. A center brace may be positioned between the sections to support the center of the watercraft.

The carriage is also preferably designed to accommodate watercraft of different sizes and handling characteristics. For example, a large kayak with a broad beam or width will normally have much greater stability and less tendency to roll, while a kayak with a narrow beam will have a greater tendency to roll. In order to provide realistic characteristics for kayaks of different configurations, the carriage preferably includes a vertically adjustable mount that is positionable beneath the kayak so that

the height of the kayak, and thus its center of gravity, can be adjusted. The stability of the kayak is decreased as the height of the bottom of the kayak above the lower surface of the carriage increases, thereby providing a more realistic feel. The mounts may be rigid or flexible, e.g., instead of a fixed mount, the kayak may be held in 5 position by straps, shock cords, or other resilient supports.

The carriage may also include a locking means to secure the watercraft hull onto the mount. The locking means should be adjustable to accommodate hulls of different widths, heights and curvatures. When using a multi-section carriage, the sections should be attached to each other in a spaced, parallel relationship by an 10 appropriate carriage attachment means.

The carriage can rest directly on the floor of a building, such as in a kayak dealer's showroom. Preferably, however, the carriage is used in combination with a carriage base, with the base being positioned on the floor and the carriage being supported on the base. The base can be of different configurations, and basically 15 serves as foundation for the lower surfaces of the carriage, facilitating a smooth tilting movement and avoiding damage to the floor. When the carriage is a two-section carriage, the carriage base may be comprised of, for example, a first track positionable beneath the first curved lower surface, a second track positionable beneath the second curved lower surface, and base attachment means for securing the first and second 20 tracks in a spaced, parallel relationship.

Brief Description of The Drawings

Fig. 1 is a side view of a carriage forming part of the apparatus of the present invention, with a large kayak mounted onto the carriage.

Fig. 2 is a side view of the carriage shown in Fig. 1, with a smaller kayak
5 mounted onto the carriage.

Fig. 3 is a top view of a carriage base forming a part of the apparatus of the present invention.

Fig. 4 is a side view of the combined carriage and base supporting a kayak.

Fig. 5 is a top view of the combined carriage and base supporting a kayak.

10 Detailed Description of The Invention

In the drawings, which are for the purpose of illustrating the invention and are not intended to be to scale, Figs. 1 and 2 illustrate a carriage, generally 10, for use in kayak training. As shown in Fig. 1, carriage 10 supports a larger, more stable kayak, illustrated by profile L, while a smaller kayak with a narrower beam, illustrated by profile S, is shown supported by carriage 10 in Fig. 2. It will be understood that two or more carriages may be used as part of the present apparatus, with the carriages being separately adjustable to engage a kayak or other watercraft at separate locations along the longitudinal dimension of the watercraft.
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Generally, carriage 10 includes a frame 12 having an upper surface 14 and a lower surface 16 that is curved along a part of its length beneath the central part of carriage 10. In the preferred embodiment, the curvature is along 25°, with the radius of curvature being 2 feet. Other degrees of curvature, e.g., from about 20° to about
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30°, with different radius of curvature, e.g., from about 1.5 ft. to about 2.5 ft., may also be used, depending on the watercraft dimensions and handling characteristics.

A kayak mount 20 extends upwardly from upper surface 14. In the preferred embodiment, mount 20 is vertically adjustable with telescoping rods 22 that are 5 extended and retracted by control knob 24 to move upper kayak receiver surface 26 up or down, depending on the size and characteristics of the kayak. It will be understood that other means for adjusting the relative height of the top surface of mount 20 may be employed. For example, replaceable top sections of different thicknesses can be used on receiver 26, or intermediate sections can be inserted beneath the top section. 10 Other alternatives will be apparent to one skilled in the art, the only requirement being that the kayak-supporting surface on top of the mount is adjustable to different heights.

Carriage 10 also includes adjustable clamps 30 and 32, moveable horizontally inwardly and outwardly by control knobs 34 and 36, respectively, to engage the sides 15 of the kayak, thereby holding the kayak securely onto mount 20. Kayak engaging faces 38 and 40 should be formed on a non-abrasive material that will not damage the kayak surface. Faces 38 and 40 inclined inwardly to better engage the curvature of the kayak.

Lower surface 16 includes a rail 42 used to engage a track within the carriage 20 base to be described hereinafter. Tilting of carriage 10 beyond a predetermined angle may be prevented by outwardly projecting sides 44 and 46 of lower surface 16. If desired, stops 48 and 50 may also be added for this purpose. The preferred

embodiment of the invention includes two carriages that are joined in a spaced, parallel relationship by connecting rods 54 and 56.

Carriage base, generally 60, best illustrated in Fig. 3, is comprised of spaced, parallel carriage tracks 62 and 64. Track 62 includes recess 66 to receive rail 42 of 5 one carriage 10. Stops 68 and 70 at the opposed ends of track 62 may be used in addition to, or instead of, stops 48 and 50. Similarly, track 64 includes recess 72 for receiving rail 42 of a second carriage 10, and stops 74 and 76. Connecting rods 78 and 80 join tracks 62 and 64 in a spaced, parallel relationship beneath spaced carriages 10. An optional intermediate support 82 with an upper watercraft support surface may 10 be carried on track 84 of base 60 approximately midway between carriages 10 to support the center of the kayak.

As best shown in Figs. 4 and 5, carriage base 60 is positioned on a horizontal surface, e.g., the floor of a kayak dealer or a training site, and carriages 10 joined by connecting rods 54 and 56 are positioned on top of base 60 with rails 42 in recesses 66 15 and 72 of tracks 62 and 64, respectively. A kayak 86 is positioned on the upper surfaces 26 of mounts 20 of carriages 10 and on center support 82. Mounts 20 are vertically adjusted to move the top surface of mount 20 to a predetermined height, characteristic of the particular kayak's dimensions and handling characteristics. Clamps 32 and 40 of each carriage 10 is then moved inwardly to engage the sides of 20 kayak 86, securing kayak 86 onto mounts 20.

The user then sits in kayak and, by moving from side to side can experience the characteristics of the particular kayak, including the ease with which the kayak tilts or

leans to either side and “edges”, the ease of righting the kayak, etc. Since the apparatus is adjustable for kayaks of different sizes and handling characteristics, the user is thus able to compare the initial and secondary stability and other characteristics of different kayaks without needing to actually put the kayaks in the water. Students 5 can also use the apparatus as “ground school” to learn how to handle the kayak before being on the water.

Certain modifications and improvements will occur to those skilled in the art upon a reading of the foregoing description. It should be understood that all such modifications and improvements have been deleted herein for the sake of conciseness 10 and readability but are properly within the scope of the following claims.